

REMARKS/ARGUMENTS

Claims 1-17 are pending in the present application and stand rejected.

Claim 12 is rejected under 35 U.S.C. 112 as being indefinite.

Claims 1-3, 5-8, 11-12, and 15-16 are rejected under 35 U.S.C. 103 as being unpatentable over United States Patent No. 5,561,768 to Smith in view of United States Patent Application Publication to Nair et al. (hereinafter "Nair").

Claims 4, 9-10, and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith in view of Nair and further in view of United States Patent Application Publication No. 2001/0037435 to Van Doren.

Claims 1, 6, 8-10, 12, and 16 are amended. Claims 7 and 15 are cancelled without prejudice or disclaimer. Support for the amended claims can be found throughout the application. Among other places, support can be found at paragraphs [0025]-[0034] and with reference to Figs 2-4. No new matter has been added.

The Examiner has rejected each of the independent claims over a combination of Smith and Nair. As discussed below, Applicants respectfully submit that Smith in view of Nair does not disclose each and every element as recited in the claims. Specifically, Smith's "control processors" do not manage data routing paths on which packet data passes through a telecommunications device. Nair teaches away from separate control and data planes by disclosing monolithic routing elements in which all functions are combined into single, independent units. Thus, it is respectfully submitted that Smith in view of Nair does render the claims unpatentable. Applicants respectfully request reconsideration and allowance of all pending claims.

Rejections under Section 112

Claim 12 has been amended as required by the Examiner. Withdrawal of the rejection under 35 U.S.C. 112 is therefore respectfully requested.

Rejections under Section 103

A. Claim 1

Claim 1 recites a telecommunications device for processing packet data. The telecommunications device comprises a plurality of data processors as well as "a *plurality of control processors*, each control processor configured to manage data routing paths for routing the packet data through data processors in the plurality of data processors to destinations on the network according to the corresponding physical locations of the data processors in the telecommunications device; and a *plurality of logical nodes*, wherein each logical node includes one or more data processors in the telecommunications device and is associated with a control processor in the plurality of control processors." (emphasis added). Applicants respectfully submit that Smith in view of Nair does not disclose a telecommunications device with at least these features.

As previously noted, Smith is directed to a parallel processing computer system. Smith's computer includes "one or more control processors 12 to broadcast program *commands* to processing nodes 11. The processing nodes 11 which receive the commands *execute* them generally concurrently." (emphasis added) See, Smith at col. 2, lines 58-62. As discussed by Smith, processing nodes 11 perform certain types of arithmetic operations. Transferring data between control processors 12 and processing nodes 11 is handled by data router 15. Significantly, data router 15 is a single unit -- it is not partitioned and is not associated with any particular control processor 12. See, Smith at col. 4, lines 7-20 ("...partitioning is performed only in relation to control network 14; the data router 15 itself is not partitioned."). Rather, data router 15 directs inter-process communication for all data processor 11 and control processor 12 elements in the computer system.

Smith's computer system thus differs significantly from the claimed invention. First, Smith's computer is not a telecommunications device which processes packet data. In particular, Smith's control processors 12 do not "manage data routing paths for routing the packet data through data processors." As quoted above, Smith's control processors 12 issue commands which are subsequently executed by processing nodes 11 which perform arithmetic operations.

In this way, Smith distributes a single processing task among many processing nodes. See, Smith at col. 3, lines 44-50. There is no teaching or suggestion whatsoever that control processors 12 manage routing paths for routing packet data through data processors 11 to destinations on a communications network.

Second, even to the extent that data is transferred within Smith's computer, this function is performed by data router 15. As indicated above, data router 15 is not partitioned and is not associated with any one control processor 12. Thus, data processor 15 cannot be construed as a plurality of control processors. Applicants therefore respectfully submit that, even with regard to inter-process communication which is clearly different from routing packet data to its destination on a communications network, Smith does not teach or suggest "a plurality of control processors...configured to manage data routing paths for routing the packet data through data processors in the plurality of data processors to destinations on the network."

Nair fails to cure Smith's deficiencies. Nair discusses a routing device which contains multiple, full-function routers. See, Abstract. According to Nair, "each of the routers are logically and physically independent of one another." Id. In particular, each of Nair's independent routers (DSRs) includes its own routing information base (RIB) and forwarding information base (FIB) so that packets can be switched directly to and from the ports under its control. See, Nair at ¶31. Thus, Nair does not teach or suggest that distinct control and data processors are associated to form logical nodes. Also, both Smith and Nair fail to disclose that control processors manage routing paths "through data processors in the plurality of data processors to destinations on the network *according to the corresponding physical locations of the data processors in the telecommunications device*" (emphasis added).

For at least these reasons, Smith in view of Nair fails to teach or suggest each and every element of a telecommunications device as claimed. Neither reference discloses control processors associated with one or more data processors "to manage data routing paths for routing the packet data through data processors in the plurality of data processors to destinations on the network according to the corresponding physical locations of the data processors in the telecommunications device." Moreover, the combination of references fails to disclose logical

nodes which are used to route packet data and which have "one or more data processors...associated with a control processor in the plurality of control processors." Finally, since the combined references fail to disclose logical nodes as claimed, they also fail to disclose that such logical nodes are associated with distinct network service providers.

Beyond the lack of required elements, Applicants respectfully submit Smith cannot be properly combined with Nair to produce a telecommunications device having a plurality of control processors, data processors, and logical nodes. Smith partitions computing resources in a computer system so that a single processing task can be executed in parallel by many processing nodes. Nair discusses monolithic routing cards. Neither reference provides any suggestion for how to modify Smith's parallel-processing computer system to function as a telecommunications device and the Examiner does not explain how such a conversion would be possible. Applicants respectfully submit that any such attempted modification would render Smith unfit for its intended purpose as a parallel-processing computer system in which processing nodes coordinate to perform arithmetic operations. Applicants thus submit that there is no motivation to combine Smith and Nair and that there would be no reasonable expectation of success through such a combination. Reconsideration and allowance of claim 1 is therefore respectfully requested.

B. Claims 6, 12

Claims 6 and 12 recite limitations similar to those discussed in connection with claim 1 and each is believed allowable over Smith in view of Nair for at least the reasons previously given. Claim 6, for example, recites a telecommunications shelf for sending packet data to destinations on a communications network. The telecommunications shelf includes first and second logical shelves including first and second sets of data processors, respectively. The telecommunications shelf also includes "a first control processor separate from the first set of data processors configured to manage data routing paths through the first set of data processors according to their corresponding positions in the first logical shelf, and a second control processor separate from the second set of data processors configured to manage data routing

paths through the second set of data processors according to their corresponding positions in the second logical shelf." Smith in view of Nair does not disclose at least these elements.

Claim 12 recites a method for routing packet data over a communication network using a telecommunications device. The method comprises "managing routing data for the first logical node with a first control processor distinct from the first set of data processors; managing routing data for the second logical node with a second control processor distinct from the second set of data processors...routing the data from the telecommunications device to a first destination on the communication network using the one or more data processors in the first logical node...routing the data from the telecommunications device to a second destination on the communication network using the one or more data processors in the second logical node." Smith in view of Nair does not disclose at least these elements.

B. Claims 2-4, 8-11, and 13-17

Claims 2-4, 8-11, and 13-17 depend from claims 1, 6, and 12, respectively. Each dependent claim is believed allowable over the combination of cited references for at least the reason that it depends from an allowable base claim in addition to being allowable for its further limitations. In this respect, it is noted that Van Doren does not cure the deficiencies in Smith and Nair or in the combination thereof as previously discussed. Accordingly, reconsideration and allowance of all pending claims is respectfully requested.

CONCLUSION

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance and an action to that end is respectfully requested.

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PATENT

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 858-350-6100.

Respectfully submitted,



Steven A. Raney
Reg. No. 58,317

TOWNSEND and TOWNSEND and CREW LLP
Two Embarcadero Center, Eighth Floor
San Francisco, California 94111-3834
Tel: 858-350-6100
Fax: 415-576-0300
SAR:jo
61319718 v1